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COMMISSION OF THE EUROPEAN COMMUNITIES

COM(84) 46 final

Brussels, 3rd February 1984

FIRST PLAN FOR STIMULATING EUROPEAN
COOPERATION AND SCIENTIFIC AND TECHNICAL INTERCHANGE
1985-1988

(Communication from the Commission to the Council)

COM(84) 46 final

I N T R O D U C T I O N

Member States of the European Community have recognised and frequently re-affirmed the need for the Community to be equipped with science and technology sufficiently powerful and creative to overcome the challenges which face it.

Europe possesses a scientific and technical potential which is both considerable and of high quality, and which should, to achieve the above objective be kept at or brought up to the optimal level of effectiveness.

This was the reason why the Council¹ recognised the value and usefulness of increasing the effort devoted to "stimulating the Community's scientific and technical potential" and adopted on 28 June 1983 an experimental two year action (July 83 - July 85) intended to make it possible to establish and to examine the best means of achieving this new task for the Community.

The Commission therefore informed the various circles concerned and published a call for proposals on 8 July 1983, using official information channels (such as the Official Journal, the Newsletter and CREST) as well as national publications .

So far as the interest evoked by this initiative is concerned it is worth noting that, quantitatively speaking, more than 2.000 requests for information and for application forms were received by the Commission in the four months following the announcement. More than 250 proposals had been submitted to the Commission by 7 October 1983, with eligible requests amounting to a total sum of more than 24 MioEcus (see annex 2). Speaking qualitatively, the evaluation of these proposals, which² was undertaken quickly thanks to the effort put in by CODEST², showed both a large number and a great variety of high quality, innovative projects. On the basis of the advice which it received the Commission decided on 7 November what support should be allocated and all corresponding financial commitments were made by the end of 1983. At the end of this first phase of the experimental stimulation action (See Chap.I), the Commission is,³ in line with recommendations made by certain Member States³ and by CODEST, encouraged :

- to provide without delay a more detailed definition of the first multi-year plan 1985-1988 relating to stimulation activities, to be put before the Council
- to propose that this first plan be implemented as from 1 January 1985

¹ 30 June 1982

² CODEST : Committee for the European Development of Science and Technology.

³ Cf. National memoranda prepared for the European Council in Athens.

- to see to it that the submission to the Council of its proposal for the stimulation action 1985-1988 takes place before the end of the first half of 1984.

In order that the formal proposal may be as well prepared as possible the Commission would like to discuss the orientations and the scope of this action with the Council at its "research" session on 28 February 1984.

I. WHAT IS AT STAKE

Certain observations can already be made about the first experimental "stimulation" action, which tend to confirm previous analyses made by the Commission, the Parliament and various Member States⁴.

1. Decline in the competitiveness of European research

Among the factors which, all too often, limit the effectiveness of European RD&D in various fields of activity the following might be repeated and stressed :

- the current lack of communication between European scientific and technical centres (lack of mobility and interchange)

- the limited range of cooperation between these centres ; the sort of cooperation currently in existence often appears too restricted or too sectoral

- the under employment of young graduate researchers coming onto (the job market) in some sectors, and, in others, (eg. new materials, biotechnology and information technology), training which is inappropriate as compared with existing needs, and a lack of enough specialised researchers in these sectors to satisfy requirements. This kind of situation leads to a waste of intellectual resources and a loss of potential scientific and technical innovation.

2. Limitations to the effectiveness of national "stimulation" measures

It is generally recognised that national initiatives comparable to Community "stimulation" activities are not always, as is clearly demonstrated by the realities of international S/T competition, so effective as might be wished and tend to be somewhat shackled by the national limits within which they take place. At the same time, and in spite of the quality and variety of the centres and teams at work in Europe, scientists and engineers often seek to maintain preferential links with centres located outside the Community, either because they are not sufficiently aware of alternative possibilities or because they cannot find enough opportunities for exchanges and cooperation at the European level. The major national or European facilities remain, in many cases, under used. Very few opportunities are made available by individual countries to make it easier (and none at all to make it cheaper) for scientists to undertake moves within the Member States. Specific cooperation with non-European

⁴ Cf. National memoranda prepared for the European Council in Athens.

companies or centres often seems to be easier than with Community companies and centres, although the former often involves restrictive conditions which are liable to exacerbate the scientific and industrial imbalances which already exist. Lastly, the initiatives which are taken at national level these days to avoid the under-employment of young researchers remain extremely limited, and this leads to a "brain drain" which is sometimes irreparable. At Community level on the other hand, because of its very size, a better match between supply and demand can be arranged.

Thus it was that on 30 June 1982, the Council expressed its recognition of the value of a Community stimulation action which would complement the efforts already undertaken at national and international level.

3. The value of Community action

The experimental "stimulation" action has made it possible to gain a better impression of the opinions of interested parties :

- within the scientific and industrial circles of the Community it is generally considered that this type of action is an excellent accompaniment and reinforcement to the range of national and Community RD&D programmes. At the same time these actions, which are varied, flexible and subject to time limits, seem particularly well suited to the task of reinvigorating or "oxygenating" research with the Community

- in various Member States the persons responsible for National RD&D who have been consulted recognise that the effective development of a European scientific and technical action-space calls for original initiatives of this kind and that they should be widened and supplemented.

- generally it has been observed that the sharing between Community countries of the costs and risks of non programmable actions, or ones which are not provided for within the framework of multi-annual actions, makes it possible to pursue very promising lines of research which would not always have been able to find sufficient human or financial support at national level; It has, finally, been suggested that specific actions to train researchers and improve their mobility should be developed, or envisaged for the future, in Community sectoral programmes.

4. Scientific evaluation and management/administration

The stimulation activities should aim basically to fertilise and revitalise research systems within the Community. This implies the use of suitable methods. All the experts who have been consulted on this matter have recognised, and this is confirmed by the experiment now under way, that the system of scientific advice and evaluation, as well as the management and administration, should remain as streamlined, rapid and flexible as possible.

The system which is currently being tested, i.e. a high level advisory Committee, a network of anonymous referees, minimal Community administrative service and controlled decentralisation of the management of the actions, would appear generally

appropriate. For all that, the sectoral measures to be taken in the framework of the multiannual programmes would be carried out by the services currently responsible for them.

In the light of these varied assessments and suggestions, the Commission feels that it would be the right time to open out to its proper scale this function of stimulating the effectiveness of RD&D within the Community, which forms one of the basic goals of the Framework Programme 1984-1987, and whose value has already been formally recognised by the Council.

Such an initiative would enable the effective establishment of a European scientific and technical action-space to come about, this is one of the most suitable means of keeping the scientific and technical competitiveness and creativity of Europe at its highest level.

With this in mind the Commission intends to propose the implementation of a wide ranging action to "stimulate the effectiveness of RD&D". This action would take shape in the form of

- a plan covering multisectoral, multi-annual activities, 1985-1988

- the increasingly systematic use within each sectoral programme of specific methods of intervention designed to promote the training and the mobility of researchers.

II. PLAN TO STIMULATE EUROPEAN SCIENTIFIC AND TECHNICAL COOPERATION AND INTERCHANGE (1985-1988)

II.1. Objectives

The Commission has selected three main objectives for the first stimulation plan :

- to increase the mobility of researchers within the EEC as well as communication between scientists
- to develop cooperation between European RD teams
- to encourage the training and launching into a career of young researchers in the manner most befitting their talents.

II.2. Scientific and technical area of activity

The Commission feels that by its very nature the stimulation plan relates to the whole field of scientific and technical activities and to all forms of RD : basic, applied research and development. The intended scientific and technical area of activity thus covers all fields connected with "exact" and "natural" science, except those affected by questions of military or industrial confidentiality.

The very breadth of the area of activity to be selected means that particularly rigorous methods of scientific and technical selection will need to be used in order to avoid any dissipation of resources and to concentrate efforts upon the men, the teams and the topics most capable of generating major effects of stimulation.

II.3. Types of initiative and methods of intervention

The intervention methods and mechanisms now being tested in the framework of the 1983-1985 action seem generally to be appropriate to the implementation of the first Community stimulation plan. However it would appear already, in the light of experience gained to date, that they need to be reviewed, (for example it now seems clear that the support method known as "subsidies" can be dropped) widened and supplemented if they are to measure up to the objective which it is intended to tackle. In fact three types of initiative would seem to be required, combining the measures now being tested with various new forms of intervention :

II.3.1. Measures to aid intra-european scientific and technical communication

A European scientific and technical Community requires nourishment via many channels of interchange and the comparison of ideas and knowledge if it is to retain its vitality. So it is implicit in all efforts to stimulate and promote RD that the mobility of men and of ideas be encouraged. With this in view a whole range of measures should be selected :

- assistance with the mobility of researchers : awards and research grants to encourage exchanges (particularly university/industry exchanges); "researchers" travel vouchers" to facilitate intra-european journeys

- aid to communication : specialised liaison bulletins, the establishment of truly european scientific data banks, made accessible in particular to small and medium sized research teams.

II.3.2. Measures to aid european scientific and technical cooperation

The intention is to encourage joint working between teams, both in the public and private sector, located in various countries of the Community. To this end Community stimulation support could take two forms :

- financial support, with a time limit, according to the methods used in laboratory "twinning" contracts or operations contracts (see Annex 1)

- help with the better usage of major facilities : an inventory, information about current possibilities, setting up customs procedures appropriate for the movement of scientific equipment.

II.3.3. Measures to assist the training and employment of young researchers

By means of financial incentives, subject to a time limit (awards, grants as set out in Annex 1) the Commission could offer

young scientists new opportunities for training or research⁵ which would help their assimilation into national science systems.

...

Once the field of activity and the types of initiative have been decided, it would be appropriate therefore to assess what value there would be in widening the geographical scope of the stimulation plan to European non-Member States, who would participate in the costs of the plan in ways to be agreed.

II.5. Priorities

One of the weaknesses of European science arises from the fact that too often basic research is still sectoral in nature and the results are insufficiently exploited due to an absence of appropriate links between basic and applied research. So far as applied research is concerned the Community has a great potential in certain sectors where it is vital to maintain its current lead.

Three main priorities should be selected for Community support measures which will be subjected to a verification of scientific quality.

- to inspire the breakdown of barriers between basic research and applied research
- to encourage multi and interdisciplinary approaches
- to support strategic research, the results of which could contribute to the achievement of the S/T objectives adopted by the Community.

One could look forward to a significant increase in knowledge, and in promising developments, if these priorities were followed. As the Commission has previously stressed (Cf. COM(83) 260 final - 7th goal of the Framework programme) this is particularly true in the case of advanced research in vital sectors of science and technology such as composite materials, basic biology, fine chemistry, information science, basic ecology, scientific instrumentation, optics and earth sciences.

III. SCALE

A wide ranging Community effort, capable of matching the challenge, is required. The analyses and studies which were carried out in preparation for the experimental stimulation action gave an indication of the scope which should be given to a

⁵ These measures will be complementary to actions already undertaken by the Commission in the field of education and training, particularly the development grants stemming from joint study programmes. They will also be in addition to the measures proposed by the Commission in its communication to the Council upon Technological Progress and Social Change (COM(84) 6 final) which aims, via joint programmes between universities and industry, to build up both the training and refresher training of high level technicians and specialists.

plan of this kind in order that it might bring about effects comparable to the needs. It would appear therefore that, to satisfy these estimated needs over the long term, the objective should be to involve some 5% of researchers in the 10 Member States. The same analyses made it clear that a significant effect can be brought about already if synergetic actions and incentives to cooperation involve at least 1% of these researchers. This gives an indication of what the objective for 1985-1988 should be in the first stimulation plan. An approach to achieving this objective should be made by widely developing the experimental stimulation effort currently under way and putting Community measures to encourage the mobility and training of European scientists already attempted in certain sectoral programmes (e.g. Fusion, biomolecular engineering) onto a systematic basis.

Thus two complementary forms of support should be adopted. They require financing as follows :

- on the one hand, the provision of funds for the multisectoral stimulation plan itself, funding designed to support multisectoral cooperation (grants, twinning, operations) in any field where it is required, and to implement the necessary contextual measures (researchers travel vouchers, equipment inventories, etc...).

The Commission estimates that a sum of 90 MioEcus needs to be set aside for this first plan 1985-1988, the amount to be allocated progressively during the period..

(This sort of sum would make it possible each year to disburse on average 250 studentships, 150 research grants, 3 or 4 large scale operations and to involve somewhere in the region of 500 researchers in "laboratory twinings" whilst at the same time providing finance for contextual measures).

- on the other hand a certain amount of money set aside, within each of the sectoral programmes, for measures to assist the mobility and training of european scientists.

The Commission is already committed to act in this way. The approach should be followed up and systematised by providing, in every future programme, for a percentage of its funding (the percentage to vary according to the field of activity and the resources allocated) which will be reserved for financing measures of this kind. The management and the funds will come from within each programme.

IV. CONCLUSIONS

The Commission requests the Council to indicate its agreement upon the orientations set out above.

In the light of the Council's discussion on 28 Feb. the Commission will more precisely define the working methods, the fields of activity and the resources to be allocated to the plan to stimulate european scientific and technical cooperation and interchange which it intends to put before the Council before the end of the first half of 1984.

I. INCENTIVE MEASURES

- "laboratory twinning" contracts

this form of intervention is intended to make it possible for groups of researchers and/or engineers from various countries of the community to get together in cases where they are now working in parallel (or in sectors which complement each other) in a particular advanced or promising field, so that they can, together, achieve the "critical" or optimum scale by forming genuine "laboratories without walls" in a way which avoids any great need to transfer individuals. In this case community funding covers the necessary costs of meetings between researchers, of undertaking joint experiments and of exchanging results. It would also, where necessary contribute to expenses involved in making up resources (human or financial) where these are lacking

- research grants (fellowships)

these aim basically to encourage and facilitate the mobility of researchers and to open up extra research opportunities for young graduate scientists. With this in mind the grant should make it possible to cover either the costs involved in seconding researchers to a country (within the EEC) other than their own, or of employing a young researcher coming into a team from a foreign country. It should be stressed that this second formula could be used to encourage the training and employment of the sort of young researcher which industry, (particularly small and medium sized industry) might like to take on. In such cases the salary would be payed by the "employing" company and the community contribution would only be towards costs connected with mobility and the research work carried out by the young scientist in the foreign laboratory

- operations contracts

these make it possible to support original or promising work undertaken by scientific and/or technical teams belonging to various countries in the community and who agree to work together to achieve a predetermined objective within a given time. Different forms of research have to be combined in order that this can be done : basic research, applied research and technological development.

These operations will act as a supplement to programmed actions, or as a possible means of taking rapid multisectoral action in the face of scientific or technical challenges, or as a means of making preparations for a continuous, programmed action.

Operations are also a means of catalysing or encouraging multinational initiatives of value to Europe within the Community

- awards

these consist of limited support which would be granted to researchers (both beginners and experienced) so that they might go to finish off their training or specialisation in a laboratory in a different country, within the Community. These measures could take two forms :

. Commission studentships designed to be taken up by young European scientists going to finish off their training or undertake research in a country within the European Community other than their own (the Commission studentship system should be opened out to all fields of science and technology and no longer be limited to fields in which the Community has an RD programme)

. Commission funding for national bodies which distribute grants in order to widen the scope of these national aids to include candidates from other community countries.

II. CONTEXTUAL MEASURES

- "researchers travel vouchers" to facilitate intra-european journeys
- specialised liaison bulletins
- the establishment of truly european scientific data banks, made accessible in particular to small and medium sized research teams
- help with the better usage of major facilities : an inventory, information about current possibilities, setting up customs procedures appropriate for the movement of scientific equipment.

FIRST PHASE OF THE EXPERIMENTAL
STIMULATION ACTION (83)

ELIGIBLE PROPOSALS

TOTAL BY FIELD OF ACTIVITY AND METHOD OF SUPPORT

Field of Activity	Twinnings *	Research Grants *	Subsidies	OPERATIONS *	TOTAL
Interface Phenomena	20	2	8	4	34
Solid State Physics	22	4	5	2	33
Biology	41	14	7	11	73
Climatology	6	4	4	0	14
Combustion	2	1	5	5	13
Optics	5	2	2	1	10
Photometry Photoacoustics	4	0	0	0	4
Other	14	0	18	4	36
TOTAL	114	27	49	27	217

(*) Cf. Annex 1

CODEST
LISTE DES MEMBRES

Annexe 3

Belgique
Prof. I. PRIGOGINE
Prof. ULB - Prix Nobel

Dr. P. JANSSEN
Directeur Gal. "Janssen Pharmaceutica"

Danemark
Dr. N. BUSCH
Directeur Risø National Laboratory

R.F.A.
Dr. K. BÖHM
Dir. Karlsruhe GmbH

Dr. B. HESS
Vice-Président MPI

Dr. G. PAHL
Vice-Président DFG

Dr. B. SCHMIDT
Mitglied des Vorstandes Dornier

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H. CURIEN
Président CNES

C. FREJACQUES
Président CNRS

J. LIONS
Prof. Collège de France

Grèce
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Sir Peter SWINNERTON-DYER
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